

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1 - 42. (Canceled)

43. (Currently Amended) A method of inhibiting corrosion on a metal substrate with a material comprising:

preparing a metal substrate;

forming a barrier, to inhibit corrosion of said metal substrate, of a corrosion inhibitor relative to said substrate;

wherein the ~~coating~~ barrier is formed including:

an oxo-anion including the general formula A_NO_N , wherein A is a selected element, O is oxygen, and N is a number; and

an oxidic acid having the general formula $H_NA_NO_N$, wherein H is hydrogen;

wherein said barrier is operable to inhibit corrosion relative to said metal substrate.

44. (Previously Presented) The method Claim 43, wherein preparing a metal substrate includes forming a component including an aluminum alloy.

45. (Previously Presented) The method of Claim 43, wherein preparing a metal substrate includes painting said metal substrate with a material to form a first coating on said metal substrate.

46. (Previously Presented) The method of Claim 43, wherein forming a barrier relative to said substrate includes at least one of spraying said corrosion inhibitor relative to said substrate, dipping said metal substrate in said corrosion inhibitor, brushing said corrosion inhibitor on said metal substrates, absorbing said corrosion inhibitor into said metal substrate, or combinations thereof.

47. (Previously Presented) The method of Claim 43, wherein the corrosion inhibitor further includes a cation operable to substantially inhibit propagation of the pit corrosion in said metal substrate.

48. (Previously Presented) The method of Claim 47, wherein said cation is selected from a group comprising a transition metal, an alkaline earth metal, a rare earth metal, a lanthanide series element, or combination thereof.

49. (Previously Presented) The method of Claim 47, wherein said oxo-anion and said cation form a salt operable to substantially inhibit corrosion.

50. (Previously Presented) The method of Claim 49, further comprising absorbing said salt into said metal substrate.

51. (Previously Presented) The method of Claim 47, wherein said oxo-anion said cation, and said oxidic acid form a supramolecule to substantially inhibit a corrosion relative to said metal substrate.

52. (Previously Presented) The method of Claim 51, further comprising absorbing said supramolecule into said metal substrate.

53. (Previously Presented) The method of Claim 43, wherein at least one of said oxidic acid or said oxo-anion form a supramolecule to substantially inhibit the corrosion of said metal substrate.

54. (Previously Presented) The method of Claim 43, further comprising forming a supramolecule of said oxo-anion and said oxidic acid in an aqueous solution to substantially form the material to form said coating.

55. (Previously Presented) The method of Claim 43, wherein forming a coating of a material further include forming a salt of a cation and said oxo-anion.

56. (Previously Presented) The method of Claim 55, wherein said salt has a general formula of $(D_N)((H_N A_N O_N)_N (A_N O_N)_N (H_2 O)_N)_N$;
wherein D is a metal cation.

57. (Previously Presented) The method of Claim 43, wherein A is selected from a group comprising molybdenum, phosphorous, tungsten, silicon, or combination thereof.

58. (Previously Presented) The method of Claim 43, further comprising:
forming a polymer of said oxo-anion and said oxidic acid;
wherein said polymer is operable to allow release of said oxo-anion to
substantially inhibit corrosion of said substrate.

59. (Previously Presented) The method of Claim 58, wherein said polymer
releases said oxo-anion in a moisture rich environment.

60. (Currently Amended) A method of inhibiting corrosion on a metal substrate, comprising:

preparing a metal substrate ~~of a metal including aluminum~~;

forming a material to coat said substrate, including;

providing an oxidic acid;

forming a supramolecule of an oxo-anion and said oxidic acid; and

applying said material to said substrate to form a barrier relative thereto to substantially inhibit a corrosion of said substrate.

61. (Previously Presented) The method of Claim 60, wherein oxo-anion has a general formula of (A_NO_N) ;

wherein A is selected from a group comprising molybdenum, phosphorous, tungsten, silicon, or combination thereof; O is oxygen, and N is a number.

62. (Previously Presented) The method of Claim 60, wherein said oxidic acid includes a general formula of $(H_NA_NO_N)$;

wherein H is hydrogen, O is oxygen; A is selected from a group comprising molybdenum, phosphorous, tungsten, silicon, or combinations thereof; and N is a number.

63. (Previously Presented) The method of Claim 60, wherein said supramolecule includes a polymer of said oxo-anion and said oxidic acid to inhibit a corrosion of said substrate.

64. (Previously Presented) The method of Claim 63, wherein said supramolecule of said oxo-anion and oxidic acid is hydrated wherein a general formula of the hydrated supramolecule includes $(H_N A_N O_N)_N (A_N O_N)_N (H_2O)_N$;

wherein H is hydrogen, O is oxygen, N is a number, and A is selected from a group comprising molybdenum, phosphorous, tungsten, silicon, or a combination thereof.

65. (Previously Presented) The method of Claim 64, further comprising:
dissolving said hydrated supramolecule in an aqueous solution for application to said substrate.

66. (Previously Presented) The method of Claim 65, wherein applying said dissolved supramolecule includes spraying, painting, dipping, or combinations thereof to said substrate.

67. (Previously Presented) The method of Claim 60, wherein forming a material further includes providing a cation;

wherein said cation is selected from a group comprising a transition metal, an alkaline earth metal, a rare earth metal, a lanthanide series element, or combinations thereof.

68. (Previously Presented) The method of Claim 67, further comprising a salt of said oxo-anion and said cation.

69. (Previously Presented) The method of Claim 68, wherein applying said material includes causing said salt to absorb into said substrate.

70. (Previously Presented) The method of Claim 67, further comprising a supramolecular salt of said oxo-anion and said cation.

71. (Previously Presented) The method of Claim 70, wherein applying said material includes absorbing said supramolecule into said substrate.

72. (Previously Presented) The method of Claim 71, wherein inhibiting corrosion of said substrate includes desorbing at least said oxo-anion from said substrate once corrosion begins.

73. (New) The method of Claim 43, wherein forming a barrier includes forming a mixture effective to inhibit corrosion when applied to the prepared metal substrate.

74. (New) The method of Claim 60, wherein preparing a metal substrate includes forming a component including an aluminum alloy.

75. (New) The method of Claim 60, wherein preparing a metal substrate includes preparing an aluminum alloy substrate.

76. (New) A method of inhibiting corrosion on a metal substrate, comprising:
preparing a metal substrate;
forming a material operable to form a coating relative to said metal substrate to inhibit a corrosion thereof;
wherein said coating includes an oxo-anion having the general formula A_NO_N , wherein A is selected from an element operable to substantially inhibit corrosion of said substrate, O is oxygen, and N is a number.

77. (New) The method of Claim 76, further comprising:
an aqueous carrier for carrying said oxo-anion to said substrate.

78. (New) The method of Claim 76, further comprising:
applying the material to the metal substrate.

79. (New) The method of Claim 76, further comprising:
polymerizing an oxidic acid included in said material to form a polymeric oxidic acid.

80. (New) The method of Claim 79, further comprising:
a supramolecular oxo-anion that has a general formula of $(H_NA_NO_N)_N(A_NO_N)_N$;
wherein said supramolecular oxo-anion and polymeric oxidic acid may be substantially water soluble.

81. (New) The method of Claim 80, wherein a supramolecular oxo-anion interconnected with a polymeric oxidic acid in an aqueous solution has a general formula of $(H_N A_N O_N)_N (A_N O_N)_N (H_2O)_N$.

82. (New) The method of Claim 81, further comprising:
a cation which includes at least one of a transition metal, an alkaline earth metal, a rare earth metal, a lanthanide series elements, or combinations thereof.

83. (New) The method of Claim 82, wherein said material includes a salt formed of said oxo-anion and said cation.

84. (New) The method of Claim 76, where said A is selected from a group comprising molybdenum, phosphorous, tungsten, silicon, or combinations thereof.